

OFFICIAL JOURNAL

VOL. III

OCT. 1978

NO. III

CALIFORNIA
HISTORICAL
CERS RADIO
SOCIETY



For the restoration
and preservation of
early radio and radio
broadcasting.

SHE WANTED
A RADIO



CALIFORNIA HISTORICAL RADIO SOCIETY INC.

P.O. BOX 1147
MOUNTAIN VIEW, CALIF.
94040



THE OFFICERS

PRESIDENT: NORMAN BERGE

SECRETARY: DAVE BRODIE

LEGAL COUNSEL: EUGENE RIPPEN

TREASURER: JAMES CIRNER

JOURNAL EDITOR IN CHIEF: ALLAN BRYANT

PHOTOGRAPHER: GEORGE DURFREY

TUBE EDITOR: RUSS WINENOW

TECHNICAL EDITOR: FLOYD PAUL

CIRCULATION MANAGER: LARRY LaDUC, JR.

MUSEUM DIRECTOR AND COORDINATOR: TO BE ANNOUNCED IN 1979

DR. CHARLES D. HARROLD AWARD RECIPIENTS: BRUCE KELLEY(A.W.A.)

HONORY LIFETIME MEMBERS: TO BE ANNOUNCED

For membership correspondence address the Treasurer, James Cirner, 13366 Pastel Lane, Mt. View, Ca. 94040. Articles and non-commercial ads for the journal should be submitted to the Editor, Allan Bryant, 38262 Ballard Dr., Fremont, Ca. 94536. Historical data for copying or donation, should also be sent to the Editor.

THE SOCIETY

The California Historical Radio Society is a non-profit corporation chartered in the state of California, and was formed to promote the restoration and preservation of early radio and radio broadcasting. Our goal is to provide the opportunity to exchange ideas and information on the history of radio (in Calif. especially). We hope to be of service to those interested in such areas as collecting of equipment, literature, and programs, etc., and restoration of early gear. Regular meetings and swap meets are scheduled at least four times a year, in the San Jose area. We now have over 120 members from throughout the state (and a few from out of state). As we grow, so do our benefits to our members. Tell your friends about us!

The Official Journal of the California Historical Radio Society is published quarterly and is furnished free to members. Our first issue was published in September 1975, and copies of early issues are still available; the first issue is \$2.00, others are \$1.00 each. Articles for the Journal are solicited from all members. Any items of interest, such as restoration hints, information on early radio broadcasts and personalities, anecdotes about the pioneers, etc., will be gratefully accepted. Anyone interested in editing a section of the magazine on a full time basis, should contact the editor. This can relieve our editor of a great deal of work and insure maximum attention to your area of particular interest.

TECHNICAL SPOT

REPLACEMENT OF LINE CORD RESISTORS

By: Bill Fox WB6NMP

Line cords with dropping resistors built into them were extensively used on AC-DC receivers built during the mid-1930's.

In addition to being somewhat unsafe, these cords are becoming scarce. After recently purchasing a receiver in need of one of these line cords, I decided to search for a good substitute. A few quick calculations using Ohms law revealed that resistors with a 20-watt minimum rating would suffice for most purposes. Many AC-DC radios do not have sufficient room to allow installation of a common-variety 20 to 25 watt wirewound power resistor. On consulting the Electronics Buyers Guide, I found that a small metal-cased power resistor is available from:

Dale Electronics, Inc.
1300-28th Ave.
Columbus, Neb. 68601

The particular resistor I used was the Dale type HG-25, in a 100-ohm value. The power rating of the type HG-25 is 35 watts. The beauty of this type of resistor lies in the fact that it is only approximately 1/2 inch wide and deep by 2 inches long, all in a metalized case with two mounting lugs. It is available in a resistance range of 0.1 ohms to 273K ohms, and tolerances of 0.05% to 3%. For most line cord replacement purposes, resistance values will be in the range of 100 to 200 ohms, and the 3% tolerance will be more than adequate. The two mounting lugs are used to secure the resistor to the chassis. The chassis will act as a heatsink and provide additional cooling for the resistor.

Dale Electronics apparently supplies their parts through local distributors. I am quite sure that they will furnish the names of distributors in your area. These resistors cost between three and five dollars.



PUBLICATIONS

Our June issue included an announcement as to the book titled "The Cat's Whisker- 50 Years of Wireless Design" by Jonathan Hill. This is a British publication and will be a welcome addition to the library of those of you interested in the development of wireless in the U.K. We quoted a price of approximately \$14.00, including shipping. Your Society has completed arrangements with a U.S. publishing firm, whereby we will be able to substantially reduce the cost of this book to members. The revised price is \$9.60 for a hard cover copy, and \$6.00 for a soft cover. For details, see page 5 of this journal.

QUOTES

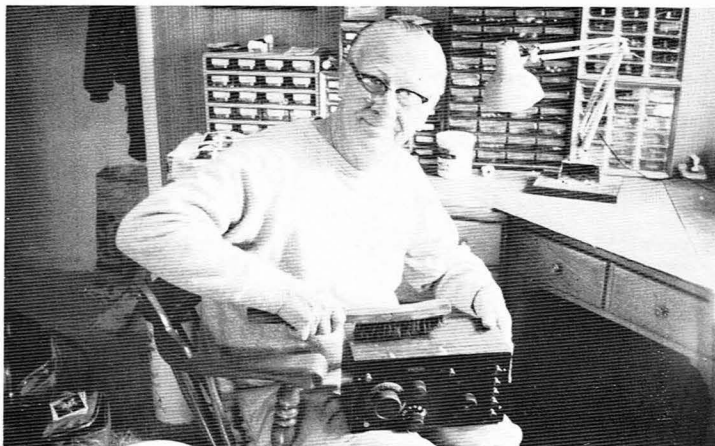
The most recent issue of The Antique Radio Gazette, quotes Bruce Kelley, editor of the prestigious "Old Timer's Bulletin" of the A.W.A., as follows:

"Any antique radio collection, whether large or small, is only as impressive as the collector's knowledge of the history, of what he has there."

RESTORATION HINTS

SHOULD THE CABINET BE REFINISHED?

By Sue Coulter



Somebody stop that man!

Your antique radio plays beautifully, and naturally it should look beautiful too. Put away the soldering iron and the VOM and take a good look at the cabinet. What condition is it in now? If you found the cabinet in a junk store converted to a bookcase, hamster cage or housing an aquarium, obviously it needs some restoration. No doubt it has a few coats of enamel. Enamel paint is the favorite weapon of antique defilers. One way to spot an antique in a junk store, is to look for the wooden object having the most coats of pink, green, blue or white enamel. The author has found three beautiful console cabinets by this method alone.

Suppose your cabinet still has the original finish or the original plus some clear laquer? Or maybe the actual wood is scratched, burned, split or unglued? If so, consider refinishing it. If the wood is unmarred and still tightly glued, maybe just a simple stripping off of old varnish, a new stain job and some finish will be sufficient. If the color and finish are still presentable, should you do anything to it? Who are you to try to improve on the original manufacturer's idea? People bring furniture to an antique shop to have it "refinished". Often it looks beautiful when they bring it in, and one wonders why they wish to alter it. Two common customer requests are: 1)"Make it match the other furniture in the room." This is ridiculous, unless it is the same type of wood as the other furniture. Most old radio cabinets are walnut or mahogany and can be stained with oak, maple, etc., but their beauty is lost. Anyone can tell by the grain of the wood, that they are not "golden oak" or "Early American maple". Trying to alter them will only make them outstandingly tacky and phoney looking. They will be only one step above the vintage cabinets that have been gutted and then filled with digital clock radios, sprayed with iridescent paint and put in the young moderns' den. 2)"Make it look like new again." New as of when? Like in 1930 when AK, RCA, Philco et al made it? Or new as in 1978? A restored antique should look like it did on the day it left the factory. Acrylic paints, plastics, modern components and wiring are to be avoided when possible. If any of these must be used, then disguise them, hide them and do all that is possible to achieve the original appearance.

Once the decision has been made to refinish the cabinet, another must be made; do you try it yourself, or take it to a commercial shop? Here are some points to consider: 1) Does the commercial shop strip the old finish material off by hand or is the item soaked in vats of paint stripper? Prolonged soaking in stripper loosens the joints and may even completely unglue it. 2) Discuss the type of finish you want. If possible, furnish the shop with a photo of how this model set looked when it was new. Old wooden objects, including your radio, should glow with the soft patina of mellowed wood- not shine like wet glass, after being "shot" with high gloss vinyl lacquer. 3) What about the logo, will it be removed? Paint stripper most certainly will remove it. It is usually possible, (but tedious), to dry sand around a logo and leave it intact. However, few commercial shops will make the effort. 4) Always remove the works, speaker, grill cloth, glass dial and knobs before entrusting your set to anyone who is not a radio expert.

So you decide to do it yourself! First of all, you will need a well ventilated area, temperature below 90° F., and free of vegetation, pets, kids and other wild animals that would be harmed by contact with paint stripper. Live in a city apartment? Then how about putting 15 to 20 layers of old newspaper on the concrete drive, place a metal garbage can on this, a wire rack across top of garbage can and put your cabinet on the wire rack.

Materials:

For a cabinet the size of a Philco 70, you will need one pint of stripper, if the old material is varnish. If it is enamel, probably three pints. The author prefers Certified Chemicals F-33 stripper. You will need at least a quart of lacquer thinner. You will also need gloves for your hands. Some plastic gloves dissolve on contact with these materials, so try a heavy rubberized glove with fabric lining, such as Playtex. Also equip yourself with a heavy paint brush and a small stiff bristled brush. The small brush should not be wire. A denture brush is excellent for scrubbing out the carved areas, because it has two shapes of bristles. Clean, lint-free rags, fine steel wool and if the wood is scratched, some #150 and #220 sand paper are also needed.

After trying many commercial paint and varnish strippers, the author prefers F-33, because it will remove enamel, as well as lighter varnishes. It does not raise the grain of the wood, therefore, sanding is not usually necessary unless the wood has been scratched. It can be rinsed out of the wood with lacquer thinner. It acts rapidly, so glued joints are not exposed to harsh chemicals for long periods of time.

Procedure:

1) Apply the F-33 with the heavy paint brush. If the cabinet is large or the temperature is hot, begin at the top and do only one square foot at a time. The time period for leaving F-33 on the wood, depends on the type of paint varnish being removed. Leave it on until the old material crinkles and forms a wrinkled skin. Remove this skin with a rag soaked in lacquer thinner. Remove the majority of the old finish in this manner. Once you've gone over the cabinet and removed the majority of the paint, concentrate on the crevices and carvings. Dip the small brush in F-33 and scrub the material out of the stubborn areas. When all of the old material has been removed, scrub out the carvings with the small brush and lacquer thinner. Allow the wood to dry.

2) If gluing is needed, glue the joints, loose veneer, etc. Let it dry a little longer than the time recommended by the glue manufacturer's instructions.

3) Burns, scratches and other disfigurements can now be removed by sanding. Excess dry glue can be removed with sand paper or a very sharp knife blade. Always scrape and sand with the grain of the wood, never across it. For deep scratches etc., begin with the heavier paper (#150). If your set has veneer, go easy. If you are too vigorous, you could sand right through the veneer. When the greater part of the scratch is no longer visible. Finish off with the fine (#220) paper. Con't on page 4.

4) Wash the set with lacquer thinner and allow it to dry. The wood should now feel satiny smooth. This wash should remove the dust, dirt and perspiration that resulted from the sanding.

5) Staining: The author's preference is "Wood Finish by Miniwax." An 8 oz. can is more than enough for even a console cabinet. Remember that the exact shade you get, depends on the length of time that you leave the stain in contact with the wood. Apply with the lint free cloth to a small area, wait a minute or so, then wipe off. If you wish a darker shade, apply more stain, wait and wipe. With a little experimenting, you'll soon find out how long you must leave it on your particular piece of wood to get the desired shade. Incidentally, if you have a red mahogany wood, and can only find the dark mahogany stain in your store, try Miniwax's No. 235 (cherry). It brings out the very best in red mahogany. Follow the instructions on the can. Miniwax stains and seals, but if you still want a little extra shine, hand rub Satin Tone on it. After the first coat of Satin Tone is dry, lightly steel wool it, and apply a second coat. When the second coat is dry, lightly steel wool again, and then give it a good rubbing with furniture polish, like Pledge Lemon Oil.

Good luck! You've just saved yourself about forty bucks! May your thing of beauty be a joy forever.



THE RADIO DOCTOR STORY

By Jack Mayr

My interest in communications started with a neighbor, Edgar Martin in 1913, or thereabouts, when we built two wireless receivers and two Xmitters in Hemet, Ca. The Xmtr was, (at my location), a Rumhkorf Coil, which put out a 3/4" spark, into a homemade Helix and a quenched gap. The antenna was about 230 feet long from the "shack" to a pole set on one of the ridges of Park Hill. The receiver was a loose coupler, an electrolytic detector, and a pair of 1000 ohm earphones, from The Electro Importing Co. This set-up worked for about eight months until Mother Nature stepped in with high wattage, and the parents refused to rebuild the "shack."

My attention was then transferred to the high school lab, where I concentrated my interest on Geisler Tubes and Wilmhurst Machines.

When family troubles broke up the home about 1916, I found myself in Oakland, Ca. looking for a job. I worked in the shipyards during the day, and studied Pedagogy at UC in the evenings. In the shipyards, I found some solenoids with miles of DSC #26 wire on them. That started it again.

I made Xtal sets for the family, relatives, and friends. I later bought a 301A from Leo J. Meyberg in S.F., for \$8.00, and it probably would have worked swell, but the damned filament wouldn't stand 45 volts, accidentally, for even a second. Lesson #1: Read directions and be careful!

My next tube was a WD 11 and I used it in a modified Hartley. I received station KFI and that did it! I was roped! I then built a Lacault Ultradyne.

That summer, instead of taking summer school, I took a berth as Sparks on the steamer Elkridge, of the Struthers and Barry Line. I came home a sadder and wiser man. Chinese girls aren't built that way at all. Con't. on page 8.

DEADLINE FOR ARTICLES AND ADS FOR NEXT ISSUE IS DEC. 4th.

THE Cat's Whisker

50 YEARS OF WIRELESS DESIGN

JONATHAN HILL

PHOTOGRAPHS BY TREFOR BALL

The history of the wireless set, from the earliest amateur creations, through its heyday in the Second World War, to the postwar advent of television.

Jonathan Hill's complete and readable account of the sets and how they were developed has more than 120 illustrations from the author's own collection of vintage radios and components, early photographs of transmitting and receiving stations, wireless manuals, magazine advertisements and cartoons.

The CAT'S WHISKER also contains a chronology of wireless history from 1864 when James Clerk Maxwell presented his theory of the existence of electromagnetic waves to 1946 and the introduction of the BBC "Third Programme" in Great Britain. There is valuable information on how to date a receiver from the names of the stations on the tuning dial, and a bibliography of U.S. and British works on the history of radio broadcasting.

Everyone who even knows what THE CAT'S WHISKER is will find Hill's book a treasure house of information and delight. Order it today!

Hardcover . \$15.95 Paperback . \$9.95
Two Continents/Oresko Books



Each type of Marconiphone, from a single valve to an eight valve, instrument represents the highest efficiency in its particular class for simplicity of operation, perfectly pure and natural reproduction of music and speech and above all consistent reliability.

Most of the new models of Marconiphone Receivers are adaptable for operation entirely from A.C. mains, D.C. mains or batteries, thus giving a choice of power supplies undisturbable with any other instruments of their type.

DEFERRED PAYMENTS
Marconiphone Apparatus can be purchased on deferred Payment Terms.

Descriptive literature on Marconiphone Wireless Equipment is obtainable from all responsible Radio Dealers or on application to:

THE MARCONIPHONE COMPANY, LTD.
210-212 TOTTENHAM COURT ROAD, LONDON, W.1
Registered Office: MARCONI HOUSE STRAND, W.C.2

Enclosed is my check or money order for \$_____ (California residents, please add 6% sales tax; please add \$1.00 per book for postage and handling.)
Please send me:

_____ copies THE CAT'S WHISKER
hardcover at \$9.60*

_____ copies THE CAT'S WHISKER
softcover at \$6.00*

*SPECIAL 40% discount to CHRS Members

MR. ALLAN BRYANT
38262 Ballard Drive
Fremont, CA 94536

SHIP TO

CITY _____ STATE _____ ZIP _____

THIS OFFER AVAILABLE ONLY TO CHRS MEMBERS

DR. CHARLES D. HARROLD AWARD

THE FIRST RECIPIENT

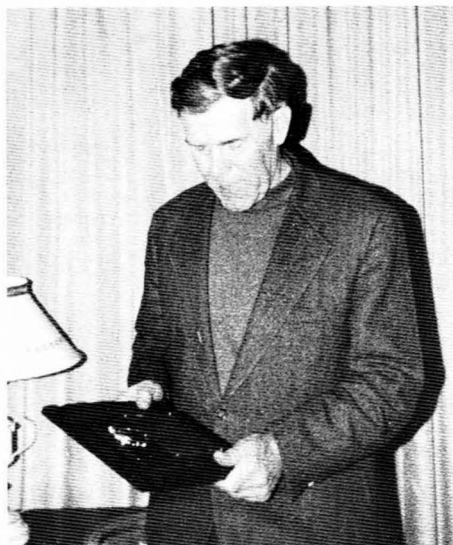
In choosing our first recipient, we felt it should be someone within one of the fine organizations around the country. Many names were suggested, but the one name that stood out above everyone else, was that of Bruce Kelley. For his unselfish devotion to the research and documentation of Wireless history, we are proud to salute Mr. Bruce Kelley!

NOTICE!

Due to the increase in postage fees, we are forced to increase our dues. The new rates are effective for new applications and renewals, as of Nov. 1, 1978.

Note that we are maintaining our First Class delivery. It has been determined that Third Class delivery is unsatisfactory, and will not be offered.

1 yr. \$9.00
Seniors \$6.00



A.W.A.'s Bruce Kelley, accepting the first Dr. Charles D. Harrold Award.

After the
THANKSGIVING
DINNER hear the voice
of the Outer World~



*No Wireless Receiving
set complete without it*

↑
CUT HERE FOR BOOK COUPON

THE TUBE COLUMN

McCULLOUGH-KELLOGG AC TUBES

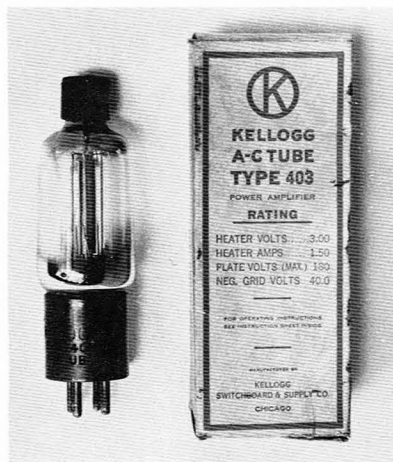
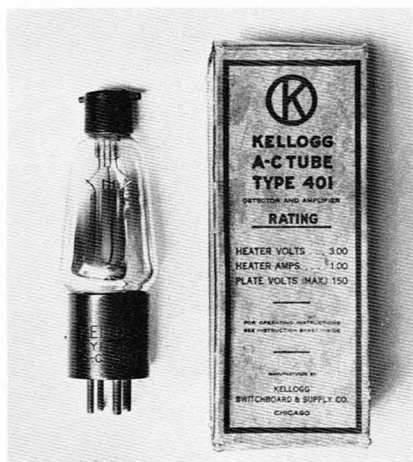
By: Russ Winenow W6AVG

The tubes illustrated herewith are known as the McCullough-Kellogg AC tubes. These tubes were originally designed to be able to use common AC house current (stepped down) without a great deal of hum, which was always present when an attempt was made to use AC on the filaments of the existing tubes of that day. These tubes employed an indirectly heated cathode rather than the plain filaments, and were a major break-thru in the reduction of hum.

First introduced in 1926 by McCullough, he soon sold out to the Kellogg Switchboard Co. who continued to make them for some time, until RCA got into the act. Others followed Kellogg, such as National Union, Sonatron and several other odd-balls which were no doubt adaptations of the RCA 227, to provide heater connections at the top and a four prong base for replacement purposes in radios built for the Kellogg tubes.

Popular Radio Magazine of July-Aug. 1927, describes the McCullough AC401 as the pioneer among the AC operated valves. It is described as having the standard base of four prongs, only three of which are used and is suitable for any usage, to which the standard 201A can be applied. The same article also describes another AC tube called the "Sovereign". The characteristics are essentially the same as the McCullough, but the appearance differs slightly, in that the sides of the glass envelope are straight, and the heater terminals at the top are threaded and use knurled nuts.

Radio News for March 1929, lists AC tubes, among which are what they call the "Overhead Filament Types". They list the 401 with filament (heater) voltage of 3 volts, and current of 1 ampere, used as a detector amplifier (not power amplifier). Also listed is the 403 with filament (heater) voltage of 3 volts, and current of 1.5 amperes, to be used as a power amplifier. Incidentally, the 403 has straight up and down sides and is slightly larger than the 401. In 1928, a patent was issued to Earl L. Koch for a tube essentially the same as the McCullough, except for an additional grid element, which was supposed to assist in reducing the hum. This idea was abandoned and as far as I know, none were ever made for commercial use.



For more information on these tubes, I recommend C.Q. magazine for Sept. 1975. Author J.K.Bach has written an indepth article on the background of these tubes.

Radio Doctor, con't.

The shipyards were still having labor trouble, so I opened a small radio shop on 25th Ave. I didn't know much about radio, so I took a course from The Radio Doctors in Mass. On finishing it, I was entitled to use the name in my business, but Glenn Bolesby was already using it in Oakland, so I couldn't. I still didn't know very much about radio, so I made the rent by winding power Xfms for battery chargers, electroplating, etc., and rewiring burnt-out ear-phones. I also sold Xtals, cat-whiskers, earphones, and Silver-Marshall kits and parts. I later had a chance to rent a shop on East 14th St., where I built four receivers for a glider club and started auto radio work, with my own car as #1. I got to know Sargent of Infradyne fame and worked with him on audio jobs.

About this time, I married the girl across the street, after going skinnydipping with her sister. There is another lesson here, but I flubbed.

I continued to do a lot of qudio work and attracted the attention of the engineers at KFWM and KGO, with my noon broadcasts of KLX Hawaiians, on a 71 A. The secret was a homemade exponential horn, but they never found out.

I helped to organize the East Bay Assn. of Radio Service Dealers with Gordon Braun. We were fighting the Free Tube Testing racket, but we never really licked it.

In 1932, we moved to Oroville and increased the population by a total of three. I assumed the name of "Radio Doctor", and developed the soldering gun when my Amereican Beauty burned out in 1942. Weller made it for me, and I still have one of the originals.

During the war, I went into the Army Air Force, and taught cadets the code, and learned to fly. My wife manned the shop in Oroville, in my absence.

After the war, in 1945, we moved everything to Chico, after selling the Oroville shop to Andrasakis. I received my FCC 2nd Class telephone license, and did taxi, Police, CHP, Fire, and Industrial Radio service. I started a M.C.C., "Telephone in your car", but it didn't pay and I had to fight Ma Bell.

In 1967, I retired and went to Alaska. However, it was too cold there for me, so I returned home to the salt mines. By that time, the harmonics were all suppressed, and didn't need any more help from us. Therefore, we sold the store and real estate, and moved to Palermo with about forty years of collectables.



E. 14th. St., Oakland Cal.



Bird St., Oroville Cal.

For an additional photo, please see the cover of the last issue.

FEATURED SET

By Floyd A. Paul

THE MODEL 20 ATWATER KENT COMPACT RECEIVER

In late 1924, AK introduced Model 20 (4640) which was basically a Model 10 breadboard redesigned to fit into a cabinet 26" x 9" x 8 1/2". Atwater Kent felt the set could be made smaller and in 1925 he brought out the Compact Model 20 (7570) in a cabinet 20" x 6 1/2" x 5 3/4", which was 35% of the volume of the previous Model 20. One other Compact Model 20, a (7960), was sold in 1925. The featured set of this issue, the 7570, remained in production through 1927. All Model 20's were 5 tube TRF sets. Unlike the TF-6 Thermodyne featured in the last issue which used parts made by various parts manufacturers, the Model 20 sets used only parts made by the AK factory. All AK parts in the 7570 were well designed for durability, and the workmanship of some finished parts is a thing of beauty.

As background for new readers, AK was a quality manufacturer of ignition systems, self starters and lighting systems for autos in the 1910-1920 era. AK made headsets in 1919, and branched into radio parts in 1922, including switches, tube sockets, rheostats, sealed amplifier units, variocouplers, variometers, transformers, misc. hardware and horn speakers. AK's first sets were an assemblage of his parts and included Models 5, 8, 9, 10 & 12. Lacquered polished brass and shiny brown bakelite components helped show off and sell AK sets in 1925-27. The AK organization was dedicated to building a quality product, as AK did for several years in the manufacturing of automobile parts.

The author's Model 20 (7570) set, had two tags on the bottom: 1) warranty and 2) inspection and manufacturing. The front panel controls consist of three variable capacitor knobs, a 3 position antenna coil tap selector switch and a molded panel-mount unit with double rheostats and off-on switch. (See Fig. 1) Some features of the 7570 are: 1) balanced variable capacitors, (by counter-balancing the aluminum plates with a metal weight, off-center and radially opposite to the plates), fixed capacitors rated at 450 and 500 volts, and a very compact design for its day. One of two 10 ohm rheostats controls the filament voltage of the two RF tubes and the other rheostat controls the filament voltage of the det. and two audio tubes. AK designers allowed for decoupling among the three RF LC circuits by physically mounting the three RF coils at mutually perpendicularly positions to each other. (See Fig. 2) Some distortion was experienced in tuning strong signal stations, but the distortion was minimized by reducing the heater voltage to the RF tubes. Voltages of 3 1/2 to 4 1/4 volts tended to keep the RF tuning sharp and reduce distortion. The equipment used to operate the set for this article, were a Sterling B eliminator of 1926 vintage and a Heathkit IP-27 regulated power supply set at 5 volts and delivering a maximum ripple voltage of 250 microvolts. Con't on page 10.



Fig. 1



Fig. 2

In checking this set out, the author found the primary winding of the first audio to be open. (plate circuit of the det.) Since a replacement transformer was not available, the author decided upon a simple RC network to replace the open primary winding. A coupling capacitor of .1 mfd was used to pass AC signals from the plate of the det. to the grid of the 1st audio and a General Radio decade resistance box was put into the plate circuit of the det., and several plate load resistor settings were tried. With a load resistor of 5K ohms, the gain of the det. and efficiency fell off badly. With 10K and 20K ohms, the results were identical and good, but with 50K and 100K ohms the output seemed optimum. (Max. gain and minimum distortion) So, although 10K ohms is given as typical plate load resistance for 6LA tubes as detectors and amplifiers, the author selected an 82K ohm, 1/2W resistor and tests were performed with that value. A detector E_p of 50 volts was found to work well and the tube consumed 0.3 ma. at that voltage. The RF and B plus cables were tied together for convenience and voltages of 40 to 150 volts, were used for tests. In the 40 to 50 volt region, some lowered volume and some distortion were noted. At 60 to 75 volts, good performance was noted and from 75 to 150 volts, little change in performance or volume was noted. At 60 volts, about 10 ma. was drawn from the power supply. Although a "C" bias voltage of -4 volts was tried, the only effect noted was a slightly reduced plate current consumption of 2 ma. to the audio tubes. When B batteries were used in the 20's, that reduced current meant longer battery life. During the testing, the C- lead was tied to A-.

A Radiola UZ-1325 horn speaker was connected to the output tube during these tests. It has a 2,000 ohm dc resistance. At 500 hertz, its impedance is 10K ohms. The dc voltage drop across the horn was 3.5 volts. Loud signals produced a 6 to 10 volt AC voltage swing across the speaker. Lesser signals producing 1/2 to 1 volt AC signal at the speaker, yielded a lower volume, but a more understandable and readable signal in a quiet room.

A frequency response test was made of the audio circuit with the RCA UZ-1325 speaker connected. The detector tube was removed and the normal voltages discussed in this article were applied to the two audio tubes. An audio signal generator voltage of 0.2 V. AC was put into junction 1. (See Fig. 3) Several different frequencies were selected. For easy comparison, Table 1 below shows all voltages divided by 0.2 in order for input voltages to be compared to unity (or one). Table 1 then allows the ratios of voltage gains at various frequencies to be compared at junctions ②, ③ & ④, which are output of 2nd audio transformer and output of final audio, with speaker impedance actively coupled. One can observe the audio frequency amplification of 500 to 2,000 hertz, into the grid of the final audio, was reasonably flat. However the signal into the speaker (speaker impedance interacting) begins to peak dramatically in the 2K & 3K hertz range.

At some future date, an audio transformer will be found to replace the bad one. The additional voltage gain of that replacement, (factor of 3) over the existing RC network, will restore some of the set's gain and volume, particularly helpful on weaker signals. In the meantime, the set works fine, with an extra long antenna. (See Fig. 4, for the wiring diagram of Model 20, 7570.)

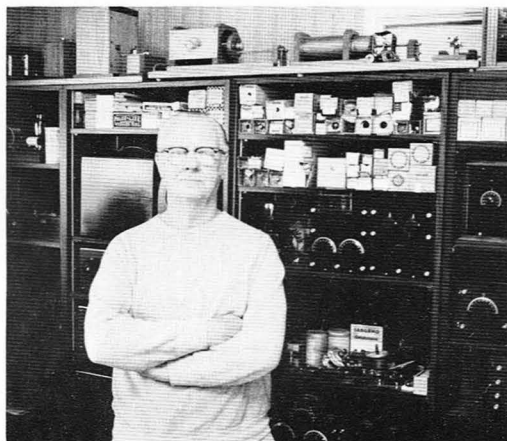
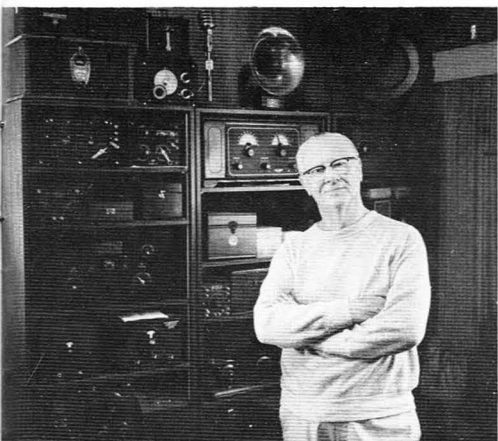
**Voltage
Gain Ratios
At Various
Junctions**

TABLE 1

Freq. (hertz)	Junctions			
	①	②	③	④
150	1	3	7	6.5
250	1	3.5	8	11
500	1	6	18	35
1K	1	6	15	65
1.5K	1	6	13	70
2K	1	6.5	15	100
3K	1	5.5	15	110

Con't. on page 11

THIS ISSUE : DAVE BRODIE



Dave is interested in repairing, restoring, and collecting antique radios. Recently he has been concentrating on crystal sets of American and European vintage.

He has been an amateur radio operator since 1955, with the call letters W6PGQ. In this realm he is a member of ARRL and the Ex "G" Radio Club.

Dave is a Certified Public Accountant and a retired partner of Cooper's and Lybrand C.P.A.'s.

Featured set con't.

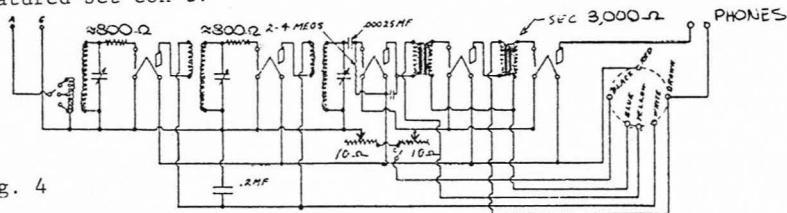


Fig. 4

MODEL 20 COMPACT SET No. 7570. WIRING DIAGRAM.

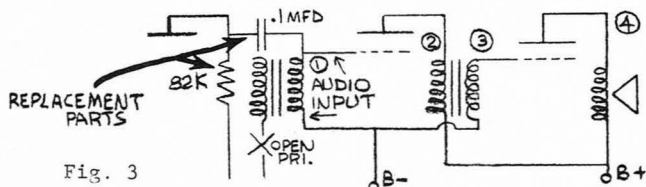
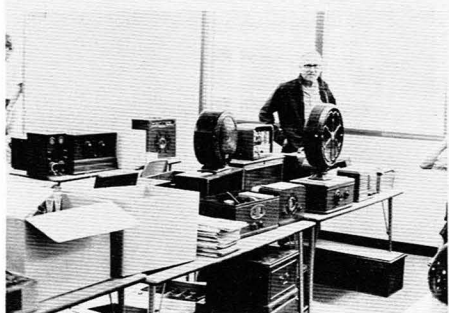


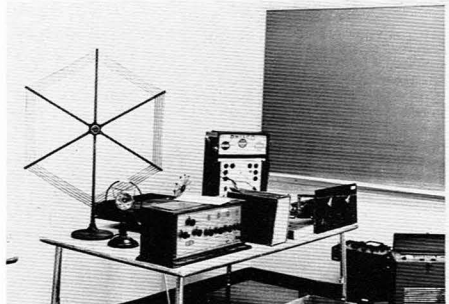
Fig. 3

SWAP MEET

The following photos were taken by George Durfey at our summer swapmeet.



Hey man! Who's selling the beer?



NOTICE

Membership applications are available for the following organizations from your Corresponding Secretary:

Antique Wireless Association:

One year- \$6.50, first class, \$5.00 third class
Two years- \$12.00 " " , \$10.00 " "

British Vintage Wireless Society:

£6.00p. per year (approx. \$13.50)

Contact Dave Brodie, phone 415-323-0353

Brett Morrison, who played Lamont Cranston on the radio series "The Shadow", died recently at the age of 66, of a heart attack. He resided in southern California.

LETTERS

Norman Berge, President
California Historical Radio Society
P.O. Box 1147
Mountain View, CA 94040

18 May, 1978

Dear Mr. Berge:

The AWA/CHRS meeting at Los Altos on 22 April, 1978 was my first CHRS meeting, and I hope to convey to you, herein, what a delight it was.

Everything about it was extraordinary -- the weather, the setting, the people -- it far exceeded my expectations, which were high. You and the persons who put it all together are to be congratulated.

The swap meet was spirited, the afternoon session was exceptional and the fellowship was warm and genuine. As a newcomer I found an atmosphere that made me feel at home -- even to the extent where I appreciated and understood the good natured jibes, ribs, and "in" jokes that peppered all of the afternoon talks.

Well, by now you probably get the picture that I got the picture of a top notch event. At the closing I applauded until my hands hurt. So, Mr. Berge, take another bow for CHRS. Incidentally, Dave Brodie's slide show was a gem.

End of superlatives.

In responding to all of this, if there is anything that I can do to help CHRS in the future, please drop me a line and tell me what it is.

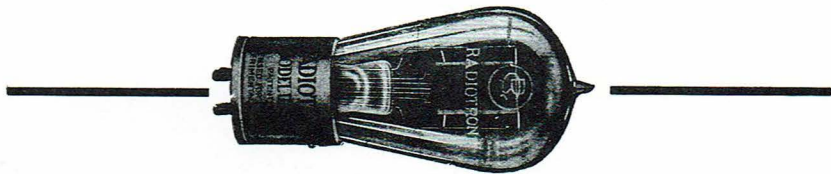
Thanks for a smash event,

Ralph

Ralph Clark (208-A)
2550 Pacific Coast Highway
Torrance, CA 90505

NEXT ISSUE

- THE WORLDS MOST DURABLE LIGHT BULB.
- THE HARROLD AWARD - WHAT IT STANDS FOR.
- C.H.R.S. FIRST LIFETIME MEMBERSHIP RECIPIENT
- MANY, MANY, MORE FASCINATING, ENTHRALLING AND EDUCATIONAL FILLERS.



THE COLLECTOR'S ADS

WANTED: Old beat-up Radio news magazines, ads, or other radio related literature, for donation to C.H.R.S. for use in the journal. Please send to the editor.

FREE: Big list of early radios and related items. SASE please.
DENNIS PETERSON, 5701-40 Ave., So., Minneapolis, MN. 55417

FOR SALE: World Radio \$60., AK57 \$60., Grebe Sycrophase w/o tubes- \$90., G.R. 546 u Volter \$17.50, Transoceanic Portable \$20., AK B Eliminator \$17.50.

WANT: Magnavox Horn.

FLOYD A. PAUL, 1545 Raymond, Glendale, CA. 91201

WANTED: Manuals or schematics for military wire recorders & VLF receivers. Xerox OK. Would like to correspond with anyone who has a telegraphphone, or knows of any- for research project.
H. LAYAR, AV-SF State U., 1600 Holloway Ave., San Francisco, CA. 94132

WANTED: RCA Victor Service Notes, "1929-1932" and "1939". Have extra "1931-1932" and "1938" Service Notes for trade or sale.
DON STEGER, 4821 Rockland Way, Fair Oaks, CA. 95628 916-967-4630

WANTED: Silver-Marshall parts: Audio transformers Nos. 251, 255, 256
Tube socket type 511

Philco parts: 8" dynamic speaker H28 or K37 and/or
audio output xfmr 32-7638
Shadow meter, working or not.

JERRY NEWTON, Rt.1 Box 262, Woodland, CA. 95695 916-662-0801

WANTED: National S-101 Audio Transformer, in good condition.
F.R. TESCHE, 3728 Mosswood Dr., Lafayette, CA. 94549 415-284-5608

WANTED: Chassis and speaker for Majestic Model 461.
NORM BERGE, 1275 Quincy Dr., San Jose, CA. 95133 408-251-7773

FRANTIC: Searching for early Q.S.T.'s, 1920 and prior. Must be complete, with covers. Will pay cash or trade tubes in whole or in part. Also need schematic for ERLA S-51.

In addition, looking for paperback titled, "Man of High Fidelity- Edwin Howard Armstrong"- by Lawrence Lessing.
DAVE BRODIE, 315 Cotton St., Menlo Park, CA. 415-323-0353

WANT ADS ARE FREE TO ALL MEMBERS OF THE CALIFORNIA HISTORICAL RADIO SOCIETY. SUBMIT ADS TO THE EDITOR, ALLAN BRYANT, 38262 BALLARD DR., FREMONT, CA., 94536. DUE TO THE NON-PROFIT STATUS OF OUR SOCIETY, WE CANNOT ACCEPT ADS OF A COMMERCIAL NATURE. THE EDITOR RESERVES THE RIGHT TO EDIT OR REJECT ADS.



CHRS

Hey, Dad! I think you grid leak is shot!